IM3080 Design and Innovation Project (AY2023/24 Semester 1)
Individual Report

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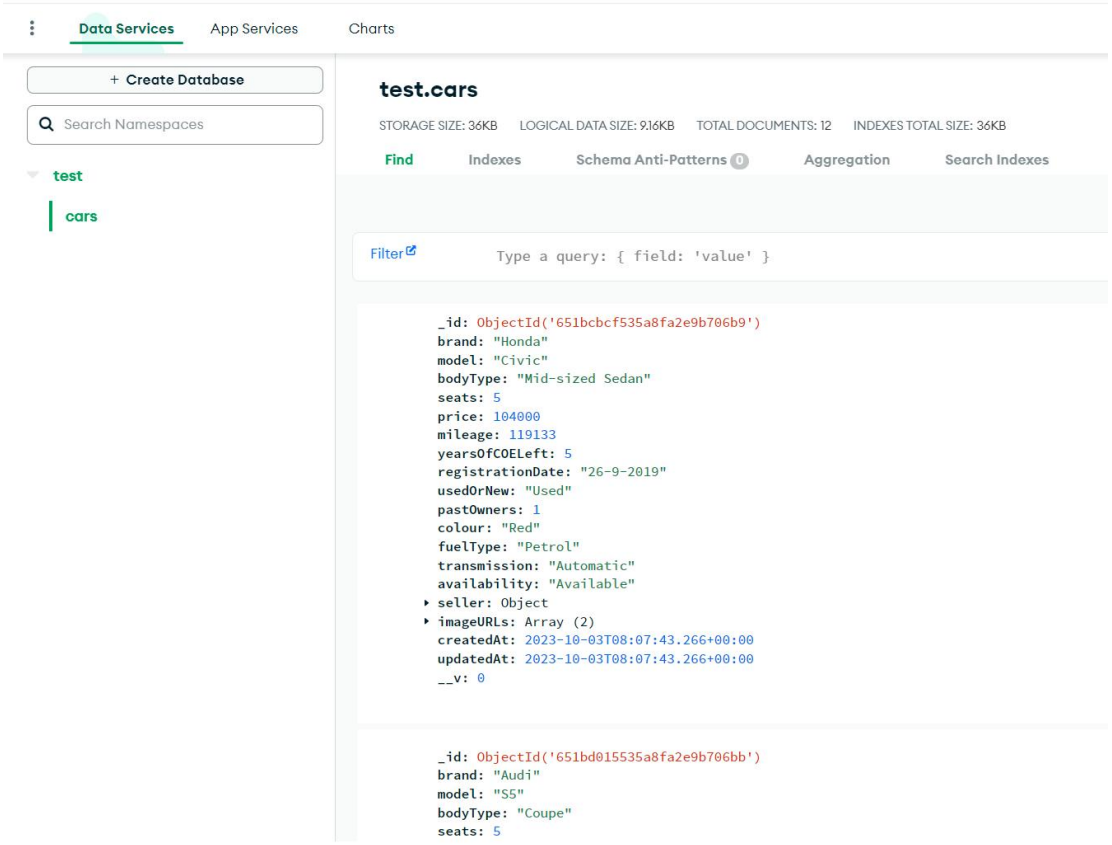
Group No: 5

Project Title: CLUTCH, Car Listings and User-Targeted Competitive Holdings

Contributions to the Project (1 page)

My contributions to the project include creating backend models for selling cars and auctioning cars, creating temporary entries based on properties of cars found in Carro, designing the Auction Controller, and consolidating and merging my code with others' backend code. I also wrote code for the searching, sorting, and filtering functionality, and wrote documentation for Auction API and User API.



Reflection on Learning Outcome Attainment

Reflect on your experience during your project and the achievements you have relating to at least two of the points below:

(a) Engineering knowledge
(b) Problem Analysis
(c) Investigation
(d) Design/development of Solutions
(e) Modern Tool Usage
(f) The Engineer and Society
(g) Environment and Sustainability
(h) Ethics
(i) Individual and Team Work
(j) Communication
(k) Project Management and Finance
(l) Lifelong Learning

Point 1: (a) Engineering Knowledge

Throughout the development of this project, I have gained a comprehensive understanding of the MERN stack (MongoDB, Express.js, Node.js and React.js) and how these technologies work together to create an interactive and data-driven web application.

To briefly explain, the frontend can handle navigation to different screens, and when the frontend needs to fetch or store data, it sends a request from the frontend to the backend. The backend is an Express app running in a Node.js environment and these will typically interact with the MongoDB database to retrieve data, update data, and more. Once it obtains the data from the database, it would then send a response with that data back to the frontend, and the frontend would handle that response by outputting the data in a specific format. The purpose of middleware (Node, Express) is to prevent exposing sensitive data to the frontend where users are interacting with the app.

As this project is meant to be mobile-based, I also had the opportunity to learn ReactNative and the various components (eg View, Flatlist, ScrollView, TouchableOpacity, Image, Dimensions, Text, TextInput, Button), packages (eg RNPickerSelect) and libraries available (eg React Navigation).

Hence, the engineering knowledge I gained lays a solid foundation for picking up other technologies. I am confident that it will enable me to tackle future projects with greater efficiency and adaptability.

Point 2: (l) Lifelong Learning

In addition, throughout this project, I have embraced a learning mindset by exploring new technologies that I was not familiar with. For instance, I watched the whole playlist of a Youtube crash course on MERN stack and it taught me how to install and set up the different softwares and create a simple webapp that fetch and add data to the MongoDB database. The learning process was challenging at times, where I rewatched or found videos to better understand things like React Hooks.

Although I was not part of the front-end team, I wanted to expand my knowledge base and learn how to use ReactNative, and also how to navigate from different screens. As a result, watched a different playlist of YouTube tutorials on ReactNative. However, I encountered some slightly outdated tutorials because it was not based on React Navigation 5, so went to search online as an alternative solution.

Therefore, this experience has expanded my technical skillset and enhanced my ability to adapt to the ever-evolving technological landscape. Having the correct mindset is crucial when facing challenges and I hope I can apply the same mindset in the future, such as during my internship next semester.